

Amendments to Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1-17. (Cancelled):

18. (Currently Amended): A method of increasing the power output in a direct methanol fuel cell comprising:
- (i) providing (a) a solid fluorinated polymer electrolyte membrane having an ion exchange ratio (IXR) of at least about 17, wherein the solid polymer electrolyte membrane has a first surface and a second surface; and (b) at least one catalyst layer present on each of the first and second surfaces of the solid polymer electrolyte membrane; and
 - (ii) operating the direct methanol fuel cell at a temperature of about 20 to about 40 °C ~~less than 60 °C~~;

wherein the methanol cross-over rate is reduced by at least about 20 %;
wherein the power output is increased up to about 15% as compared to a fuel cell comprising a solid fluorinated polymer electrolyte membrane having an ion exchange ratio (IXR) of about 15 and the same thickness as the solid fluorinated polymer electrolyte membrane in (a).

19. (Currently Amended): The direct methanol fuel cell of Claim ~~4~~18 wherein IXR of the solid fluorinated polymer electrolyte membrane in (a) is 17 to 29.
20. (Previously Presented): The method of Claim 18, wherein IXR of the solid fluorinated polymer electrolyte membrane in (a) is from 19 to 23.
21. (Previously Presented): The method of Claim 18, wherein IXR of the solid fluorinated polymer electrolyte membrane in (a) is 23.
22. (Cancelled)
23. (Cancelled)
24. (Cancelled)

25. (Previously Presented): The method of Claim 18, wherein the power output is increased by about 5 to about 15%.
26. (Previously Presented): The method of Claim 18, wherein the power output is increased by about 10 to about 15%.
27. (Previously Presented): The method of Claim 18, wherein the thickness of the solid fluorinated polymer electrolyte membrane in (a) is 175 μ m, and the IXR is 23, and methanol cross-over rate is reduced by 60%.
28. (Previously Presented): The method of Claim 18, wherein the thickness of the solid fluorinated polymer electrolyte membrane in (a) is 250 μ m, and the IXR is 23, and methanol cross-over rate is reduced by 75%.
29. (Previously Presented): The method of Claim 18, wherein the solid fluorinated polymer electrolyte membrane in (a) is a perfluorinated polymer.
30. (Previously Presented): The method of Claim 29, wherein the perfluorinated polymer comprises a carbon backbone and at least one side chain represented by the formula $-(OCF_2CFR_f)_a-OCF_2CFR'_fSO_3Y$, wherein R_f and R'_f are independently selected from F, Cl or a perfluorinated alkyl group having 1 to 10 carbon atoms, $a = 0, 1$ or 2 , and Y is H, an alkali metal, or NH_4 .
31. (Previously Presented): The direct methanol fuel cell of Claim 30, wherein the perfluorinated polymer comprises a carbon backbone and at least one side chain represented by the formula $-O-CF_2CF_2SO_3H$, or a salt thereof.
32. (Previously Presented): The method of Claim 31, wherein the perfluorinated polymer has an IXR of about 17 to about 29.
33. (Previously Presented): The method of Claim 32, wherein the perfluorinated polymer has an IXR of about 17 to about 29.
34. (Previously Presented): The method of Claim 33, wherein the perfluorinated polymer has an IXR of about 23.